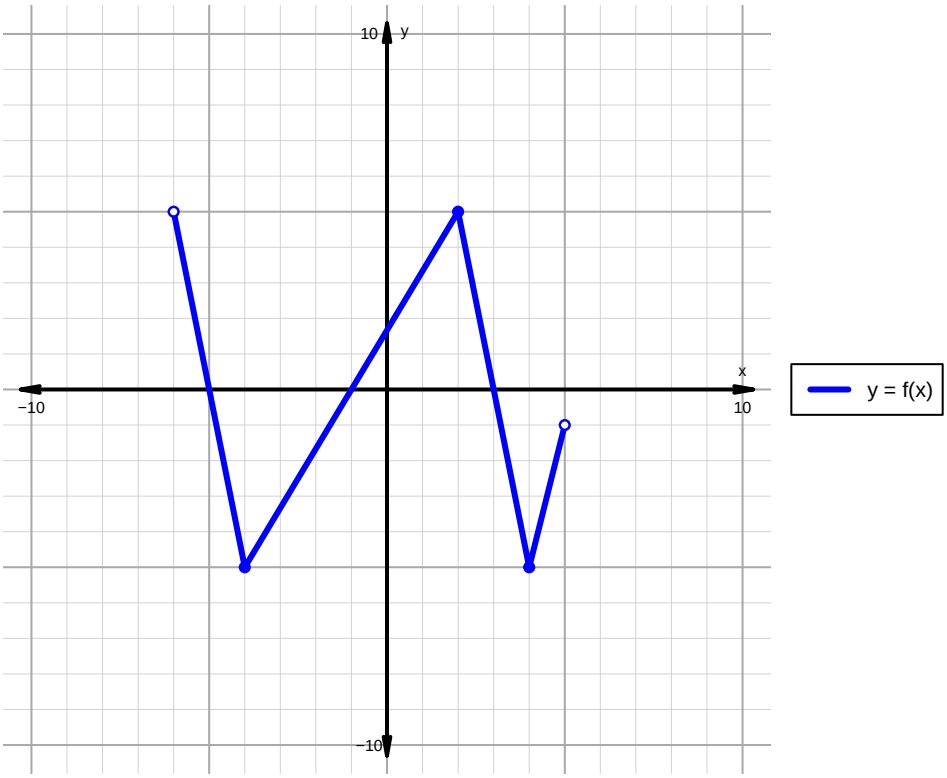
Name: Date:

Intervals, Transformations, and Slope Solution (version 48)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-1, 3)$
Negative	$(-6, -5) \cup (-5, -1) \cup (3, 5)$
Increasing	$(-4, 2) \cup (4, 5)$
Decreasing	$(-6, -4) \cup (2, 4)$
Domain	$(-6, 5)$
Range	$(-5, 5)$

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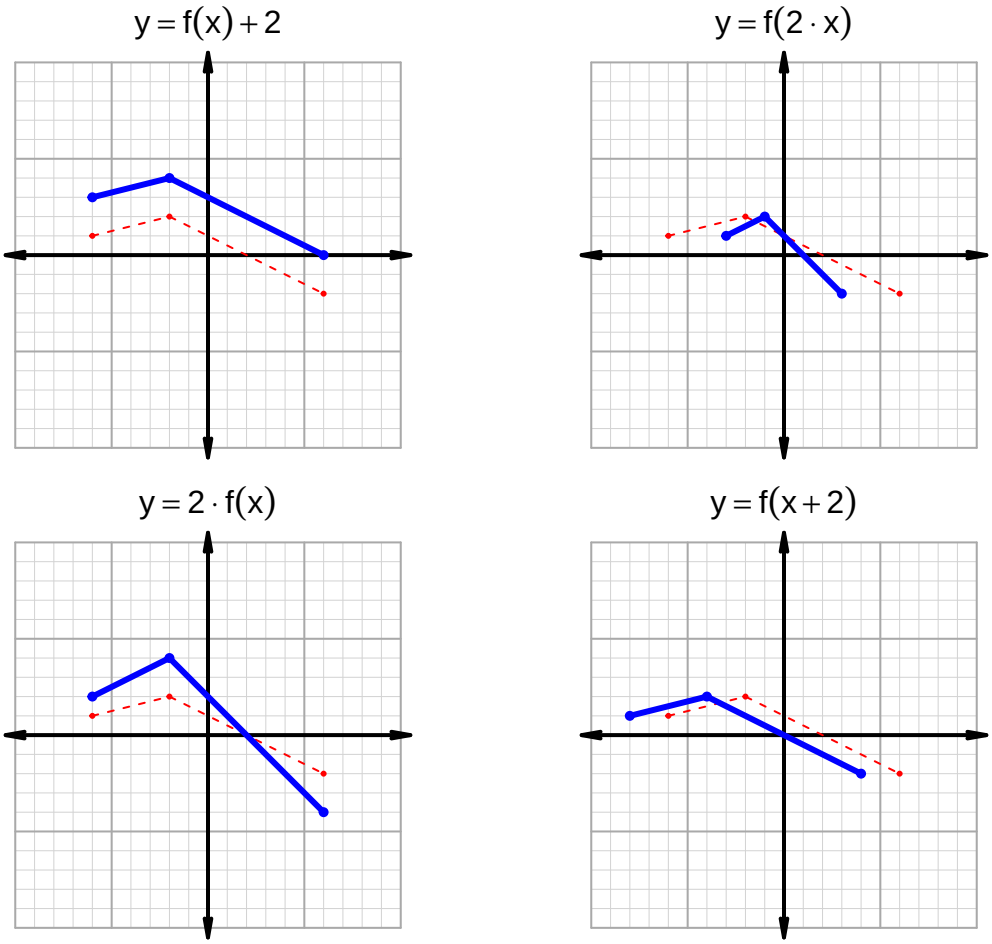
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 69$ and $x_2 = 83$. Express your answer as a reduced fraction.

x	$g(x)$
69	87
80	69
83	80
87	83

$\frac{f(83)-f(69)}{83-69} = \frac{80-87}{83-69} = \frac{-7}{14}$

The greatest common factor of -7 and 14 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-1}{2}$$